

A
SUMMARY
OF
MATERIAL HEADS

Which may be *Enlarged* and *Improved* into a *Complete*

ANSWER
TO
Dr. Burnet's Theory of the EARTH.

Digested into an ESSAY, by a *PENSIONER*
of the *CHARTER-HOUSE.*

Semper ego auditor tantum, nunquam reponam? Juv.
Cum in
Nullius in verba jurare in verba Magistri. Hor.

L O N D O N,
Printed by T. B. and are to be Sold by the Book-
sellers of London and Westminster 1696. 60

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Dr. Barrow's Theory of the Earth

Digested into an ESSAY, in a NEW FORM
of the CHARTER-HOUSE.

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To the RIGHT HONOURABLE
The Governours of the Charter-House.

My Lords,

I may seem Inconsistent with a Character Your Honours vouchsafe to bear, That any who live under the Influence of Your Lordships special Care, should be apprehensive of the Want of Protection. And it would be so indeed, My Lords, did all keep within the Bounds and Precincts of the Liberties allotted them. But since I have been so rash, as to venture Abroad into the World; it is from that Transcendent and more Extensive Character of Honour, the Signature of Noble and Exalted Minds, that displays it self in supporting the Weak and Defenceless; and not from any Claim of Right, arising from Promise or Stipulation, That I can expect, and do most humbly crave Your Lordships favourable Protection, in a little Ramble that now I have made to the Press. Had the Excursion been greater, My Lords, it is probable my Confidence would have been more Excusable, and a fuller grown, and more bulky Book would have born a truer Proportion to the Ambition I had of having brought a more Earlier Offering of Duty and Gratitude to Your Honours. It was what I intended, My Lords, and should have performed, had not my Design, for want of kinder Nursing Fathers, bin starv'd into this scanty and lank Essay. Nevertheless, I am inclin'd to think, My Lords, That the Bulk alone will be no Hinderance to its Acceptance, nor to the Grant of that Favour which is humbly su'd for at Your Lordships Hands; since, if I be not very much impos'd upon, little as it is, it may do some Good in the World.

It is therefore in hopes of Your Honours Countenance and Approbation, That with so short a Weapon, I have engaged a Mighty and well Appointed Adversary. The Attempt I confess, seems rash, My Lords, but cannot think it will be look'd upon as Dishonourable, since my Dagger is no Stiletto, is neither poison'd nor rusty, nor is

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The Epistle Dedicatory.

It wrap'd up and hid within a treacherous Sleeve. To such as may think it a little too sharp and keen, I have this to say, My Lords, That it is the more like for that to do Execution, and to prevent more trifling and fooling of Sophisters and Theorists, with a Matter that is too serious to allow it, or to admit of a dallying and perfunctory Dispatch. And that it was an honest Concern for so good a Cause, as that of Truth and Religion, with a zealous Endeavour to undeceive, if possible, a licentious and prophane Age, of a most dangerous Error, into which many, for no other Reason but that it is A la Mode, are capriciously fond of being deluded, that hath in a great Measure given it the Edge.

Were I to alledge other Personal and more particular Reasons for the Thing, My Lords, I should be blinder than indeed I am, and that's what no Man living can be, if I mistook the proper Judges to whom I ought to Appeal: But then again, I should be rasher too, My Lords, than is fit for a Man in better Circumstances than I am in to be, if by a Message from the Press, I summon'd in Witnesses, and an Audience to the Tryal. It is too great a Trouble for Your Lordships at present, That the Author with his little Naked Book, is laid at Your Honours Feet, humbly begging from your Acceptance and Protection, a Covering for both, against the foul Weather of Censure and Malice.

If this great Honour be to be obtain'd, My Lords, I shall then rest secure, in the Confidence of being reputed to be, what really, and with all Submission, I am

My Lords,

Your Lordships most Dutiful

And Obliged Servant and Votary,

ARCHIBALD LOVELL;

Brother and Pensioner of the Charter-House.

Charter-House,
June 16th,
1696.

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ANSWER

TO

Dr. Burnet's Theory of the EARTH.

THE Learned Author of this Sacred *Theory of the Earth*, Dr. Thomas Burnet, Master of the *Charter-House*, who allows the World to have been drowned by Water, is pleas'd to object against the manner of the Deluge, as it is related by *Moses*, and his Reason for so doing, in short is, the difficulty of finding so much Water in the Universe, as might effect so great and stupendious a Work; for having, by the help of *Messenius*, calculated the proportion of the Water necessary to drown the Earth, and rais'd the Flood to that pitch, which *Moses* says the Waters did arise to, above the Tops of the highest Moun-

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tains:

tains : Though he doth acknowledge, that there is as much Water at least to be seen on the surface of this our Globe, as there is dry Land ; yet he concludes , that it would require Eight Oceans as big as the present , to perform the Work in the manner *Moses* says it was done. And since so great a quantity of Water cannot be found in this World , nor, in probability, borrowed from any where else, it could not be had without the expence of Two great Miracles ; the one in creating so much Water, as would be fit to do the business ; the other in annihilating the same after the Work was over ; so that, since *Deus & natura nihil frustra faciunt* ; if any other way or expedient can be found , it is vain and unreasonable to have recourse to Miracles ; and this I take to be the strength of all the Reason and Argument that he has to object against the truth of *Moses's* Relation.

Now since the Author confesseth , that there is as much Water as dry Land in the World , I think one may venture to say, that *Intelligendo facit ut nihil intelligat*, he cannot see the Wood for Trees ; and that as much more would make it all Water ; for Two halves makes a whole : So that were I not confined to the brevity of an Essay , I should spend a little time, to make it plainly appear, that the Author has made an inauspicious Blunder in the beginning of his Work, and indeed a greater Bull, than the honest *Irish-Man* was laugh'd at for , when he said , *They had broken his Stick into Three Halves* ; for here the Author has broken a Whole into Ten Halves ; the Earth and the Ocean being already Two Halves, he adds Eight Oceans more, to make the Ocean half as big as the dry Land half, which in all makes Ten Halves ; and all this performed by meer natural Philosophy , without the help of Magick or Mathematicks. But at present , I shall proceed , to shew , how without a Miracle, Water enough may be had in the World , to bring a Flood upon the Earth, and drown it in the manner *Moses* has related it.

To this purpose, I shall lay down as a Principle sufficient to overthrow all the Author's *Hypothesis*, this plain *Proposition*, which being in it self so evident, as not to need demonstration, might be demanded as a *Postulate*, and will be readily granted by all knowing Men, viz. *That all Bodies which tend to a Central Point, as their place of rest, must needs cast themselves into a Circular or Orbicular Figure*. And the Reason is plain and obvious; because no natural Body in motion can stop till it comes at the place of Rest, or as near it as possibly it can, for the interposition of other Bodies that have their right to be before it. Now since in a Circle or Orb, all the points of the Circumference are equally distant from the Center, Bodies which rest upon, and are gathered about the Center, must needs cast themselves into a round, to be as near the place of rest, as possibly they can. From this true Position, two undeniable Corollaries do result, First, That there can be no *Vacuum* or Place in the World altogether empty of some Body; for Bodies tending towards a place of Rest, must croud and touch one another contiguously; for if any void Space should be betwixt them, the succeeding Body would not be so near his Place as otherwise it might, which is contrary to the Position laid down. And then next, that no Natural Body can shift or remove its place, but that in exchange, another must immediately possess it; else there must needs be a *Void* in the Universe, contrary to the Principle of Nature. Not but that there are small and imperceptible Interstices, more or less in all Bodies, occasioned by the sight and position of the variously figured Particles, of which they are constituted; these being absolutely necessary for the motions, changes and alterations of Nature, as Generation and Corruption, Growth, Vegetation, Rarefaction and Condensation, Compression, Expansion, and the like, which cannot be performed without them; but that there should be any considerable Space wholly void and destitute of some body, is inconsistent with the order and economy

mony of the World, the being of Matter, and the Idea of its Creator. And thus the debate of Philosophers about the being, or not being of a *Vacuum*, may be easily reconciled, and both may be in the right, and both may be in the wrong, according to the different Sense they spake in.

Now since Gravity is that Principle which gives natural Bodies their tendency towards the Center, and yet seems not essential to the pure and abstract notion of matter of which they consist, it would be worth the while to find out what Gravity truly is. To guide us therefore into this Enquiry, we are to conceive, that the great Abyss of Matter, which made the Chaos, was no more but a Mass and Croud, or aggregate of infinite Numbers of Atoms, jumbled together in that vast Expanse, without any property or quality, but that of shape and figure, according to the Opinion of the Ancient and Modern Corpuscularian Philosophers. And that there being great variety amongst those indivisible Atoms, as to their shape and figure, some Globular, some Angular, and those of many different kinds; whilst reeling in the dark, and encountering one another fortuitously too (if Naturalists be in the right) according as the several Figures were fitted for union and coalition, they combined and incorporated one with another, some into a more close and compact, some into a more lax and fluid concretion, and divided themselves into several distinct and homogeneous Bodies. Some of these Bodies then that consisted of more Atoms and parts of Matter closely compacted together; and therefore taking up a less space, since the bounds of the Expanse were not to be enlarged nor contracted, but all filled, did, as they must needs do, possess the middle part or center, leaving the rest of the Expanse to be filled with the other Homogeneous Bodies, according to the texture of the several constituent Particles, which was either more close or loose, as their Figures did suffer them to unite; so that the Bodies that were of the most lax and open Concretion, possess them-

themselves of the Place most remote from the middle, which is the circumference, and the utmost limit of the Sphere or Vortex; and the others in order, filled up the intermedial Spaces betwixt the Center and that. These distinct and homogeneous Bodies are those which are called the first perceptible Elements of Nature; and by reason of the quantity of Matter they contain, their solidity or fluidity challenging the Places that they possess in the Universe, by what cause soever they are removed or displaced, they naturally tend to the same again, because there is no other Place for them, all being full of the other Bodies, which will not make room for them, nor incorporate with them. And this is that which is called Gravity, and Levity, according to which the Elementary Bodies possess themselves of their several Places in the Universe; though indeed all affect to be as near the Center, or Point of rest as they can, from which they stir not, unless the danger of a *Vacuum*, or some other external Force or Violence compel them so to do.

According to this Philosophy, if no other Power but that of Nature, were concerned in framing of the Universe, those great Bodies which we call the Elements, though indeed they be not purely so, must needs have subsisted in this Order. First, The Earth being the most weighty, as consisting of most solid and compact Matter, must have been, as now it is, the Basis and Foundation of all; then the Water, as coming nearest to it in consistence, must have succeeded in place; after it the Air; then the Ether; and last of all the Fire, if any such Element exist, separate from the rest, to limit and circumscribe this World. And since all these, being in their proper Places, according to the Laws of Nature and Gravity, they must have rested, and continued in that posture; no Earth then could have been seen, being covered and surrounded by the Orb of Water; and the Superior Orbs being invisible to the Eye, nothing must have appeared to the sight, but a vast and spacious Globe of Water. Now, since we find

find it is otherwise, and that the Earth is to be seen as well as the Water, distinct and separate from it, and both replenished with vast numbers of Beings, animate and inanimate, all harmoniously conspiring to the order and beauty of the whole Universe, and to the mutual uses and advantages of each other, which is far above the power of meer Matter to effect; it must needs convince the most obstinate and prejudiced Materialist or Atheist, that matter and nature are not eternal, all-sufficient, and independent; but that they must derive their being and virtue, from a Supreme and Omnipotent Cause, which hath brought Nature out of the Chaos of Matter, and put all things into the decent state and order that we see them in; and that this was so done in the beginning of Time; when, as *Moses* the Servant of God tells us, in a stile suitable to the Grandeur of the Subject, that *the Spirit of God moved upon the Waters*: And the Great Creator by an Almighty *Fiat*, commanded *Dry Land*, and all things to be; and accordingly *Dry Land*, and all things were.

It is not then, by the Principles of the simple Elements, or of meer motion and gravity, that the works of Nature in the state they are now in, do perform their several Offices and Operations; for we may observe, that those Powers are in many things restrain'd, without altering the essential properties of natural Bodies, or hindering the ordinary exercise of them, in any thing that is consistent with the order and welfare of the Universe.

It is then the Constitution they received at their first Creation, the Figure, Proportion, Scite and Position of their parts in Mixion, which Philosophers have call'd the Substantial Form, that is, the main Principle whereby they act and preserve themselves in the order and state they are in; which, if dissolved, and Nature let loose to itself, the Elements would certainly return to their antient state; and by their primary and natural principle of Gravity, involve all things again into

into confusion. Whatever might be the immediate cause of this, the Will of the Creator must be the chief Director. Since the Creation, the World has but had one sad instance of this, and by virtue of a Divine Promise, is to have no more before its final Dissolution.

And this happened in the Days of *Noah*, when, for the Sins of Mankind, the World was overwhelmed by a Flood, and the Waters mounted Fifteen Cubits high, over the tops of the highest Mountains; which how it may be done by Natural Causes, without any Miracle, is that which now I undertake to explain.

In order to this, It will not be amiss to observe the external Face and Figure of the World. The Terraqueous Globe then, which we inhabit, though it be round; yet it is not of a smooth, equal and united Surface; but there are in it, many and great Depressions and Cavities, vast and spacious Chasms, that lie betwixt the highest swelling of the Ocean, and the tops of the Mountains, as there is between one Mountain and another, and these vast Chasms, are the Appartment of the lower Region of the Air, which is that strong Barrier, though but a thin and transparent Partition Wall, that hinders the tumid Ocean from falling down, according to its natural principle of Gravity, and overflowing the lower Grounds, and by so doing, bringing Ruin and Desolation upon a great part of the habitable Earth. For we are to take notice, that the Ocean in its highest swelling, rises to as great a height as the tops of the highest Mountains. And if this could not be demonstrated by Experience and Observation, as it can, the following Proof is sufficient to evince the truth of it.

Parts of Water being imbibed by the Earth, as they are forced into its Pores by succeeding Parts that descend from higher Places in the Ocean, are in the same manner as the blood does pass through the Flesh and Bodies of Animals, percolated through the Body and Substance of the Earth, where

where leaving their saline Particles, to impregnate the ground with fertility and vegetation, the vapid and simple Lymph is forced into small and capillary Veins, by which it is conveyed into larger Vessels, or subterranean Pipes and Conduits, and from them is discharged into more capacious and hidden Rills, as into some *Vena Porta*, or *Cava*, out of which, *qua data porta ruit*, at the first open Passage it meets with, it gushes out in Springs; where being in the open Air, and in the Region of another Element, to which it must yield, it falls downward, and by way of circulation, returns back to the Ocean, from whence it came. This, as it plainly discovers the Origin of Fountains and Rivers, which hath hitherto puzell'd the most ingenious and industrious Enquirers; so it does, in a manner, demonstrate, that the swelling of the Ocean rises higher, or at least as high, as the tops of the highest Mountains, where Springs of Water are found, and Vegetables grow.

The Use I make of what has been said, is, to shew, that the Elements, those simple Bodies of Nature, maintain their several Posts in the Universe, by the different form and figure of the simulary Particles of which they are constituted, as must needs appear to us, when we consider the difficulty there is, and violence that must be used, to sink a Body of Air out of its natural place into the Water, or to make a Body of Water mount into the Air; for by no means can they be made to incorporate, and mix together, whilst they subsist in intire Bodies. To effect this, they must be attenuated, and taken in pieces. It is by this Principle then, and not that of Natural Gravity, that the lower Region of the Air maintains its post, and becomes a Barrier to keep the Ocean from falling down upon those Parts of the Earth, that are lower than it self; and that it performs this with so much vigour, that when it is attack'd by any powerful Neighbour, born down and compressed beyond the natural scite and position of its parts, it will regain its ground with such a suddain
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and forcible Jerk of Reciprocation, that hardly does the Explosion of Gun-powder exceed it ; as may be experimented by shooting in a Wind-Gun ; or that if it be forced by any irresistible Impulse to quit it's Place, it forces the hardest and most solid Bodies to give way , and make room for it ; sad Instances of this may be seen, when by Hurricanes, Tempests and violent Concussions of the Air , Trees are blown up by the Roots , Houses laid prostrate, and sometimes large Pieces of Ground transplac'd , to make Way for it.

But when , by the direction of the Supream Being, and the Influence of instrumental and secondary Causes, the Air does pass from its close Order of Nature, opens rank and file, and sends off detachments of small Bodies and Particles at the same time, when the Ocean, being in the same manner affected, the Fountain of the great Deep is broken up, and Mother *Thetis* opening her Breasts, sweats out her purer Exhalations : These small Particles of Air, enter into the evacuated Spaces of the Water, as the Effluvia of the Water possess themselves of the Interstices of the Air so deserted ; and these two being Strangers , new Comers , and at first no very good Neighbours , co-operating with the other causes, mutually force more Particles to follow the same Course they have done ; so that by a successive and continued Transmigration of Colonies, the Two Elements are blended and incorporated together, and in a manner united into one Body , the Air becoming a thinner Water , as the Water doth a thicker Air , both improper for the nourishing and preserving the Life of the Animals, that live in those Elements, in the state they are now in . This Rarefaction and Condensation is indeed a natural sort of Distillation, which may be well illustrated by the ordinary Process of Distilling , which doth exactly imitate the same. Of this we have daily Instances, but because they are so common, but slightly observed ; as when Vapours and Exhalations attracted and raised by the Heat

heat of the Sun in the Day time, fall again by Night in Dews: But this is far more remarkable in the Instance of Water-Spouts. And since that does conduce so much to the Illustration of what I am about, and that I my self have seen one at Sea, I will describe it with as much Plainness and Exactness as possibly I can.

Being at Sea, and sailing between the Tropics, in or about the 15th or 16th Degree of Northern Latitude, one Morning, when the Weather was very fair, the Air serene, not troubled with the least Cloud, or Shadow of Meteor, and the Sun shone very hot, about Ten a Clock in the Morning a Sea-man at work on the out-side of the Ship, alarm'd us with a Cry of a *Spout*, a *Spout*; the Curiosity of seeing this, invited me, as it did others, to come upon the Quarter-Deck; there I saw to the Larboard, within about half a League distance from the Ship, in the middle of the Ocean, that then look'd as smooth as a Looking-Glass, a Circle of Water, which appeared not to be a quarter of a Mile in Diameter, much differing from the rest of the Sea; for the Water therein did goggle and wamble much faster and higher, than any Copper or Caldron full of Water could have proportionably done over the intense Heat of an open Fire. From this boiling Water, there arose Steams as thick as the Smoak of a Brew-house or Glass-house, but pure and white, like that of the cleanest Wood, or like thick and white Fogs, that gather about the Tops of Trees in an Autumn Morning; this Steam ascended impetuously, as in a natural Alembick, consisting of two Pillars, of a black Cloud, which terminated above in a Point like a Cone, wherein was a small Opening, through which the Sun peeped, and darted down his Rays upon the Circle of the Water underneath the thick sides of that Cloudy Alembick or Cone, which widened towards the Basis, but reacht not the Surface of the Water, by some little distance, hindring the Sun-beams from being dispersed any where else; so that in the space of Half an Hour after this first

first appear'd, the whole Hemisphere was overcast with black, thick, and low hanging Clouds, which soon bursting, the Windows of Heaven were opened, and poured down such a prodigious quantity of Rain, in whole Caracts, as forced us all under Decks; and this Rain lasted, as I do remember, near a third part of the time longer than the Clouds were a gathering in the manner aforesaid. I had the Curiosity to taste a little of the Rain Water, that I might know whether or no, in so swift a Distillation it could be wholly purified from its Saltness; and when I found an odd taste, but what, I could not call, a brackishness in it; the Master of the Ship rectified a mistake, which otherwise I might have fallen into, by telling me, that since I had the Water out of the Ship's Bucket, that oddness of taste proceeded from the Pitch and Tar of the Ropes, from which it had drop'd; but that the Water was sweet and fresh.

Now, since *subistente causa subsistit effectus*, had this Distillation continued, or been often repeated, or had several other Spouts of the same kind happened in different Horizons at the same time; as what can be said to the contrary, but that they might, I dare be bold to affirm, That in less time than Forty Days, and Forty Nights, which is the space assigned by *Moses* for the Encrease of the Waters, to compleat the Flood, the Waters would have prevailed, and mounted as high above the Tops of the highest Mountains, as *Moses* says they did; nay more, should the same cause be employed and continued, a sufficient Space of Time, it's more than probable, that not only the Water and Air might be blended and mixt together, but that these two making then a Body still thicker than that of the Orbs above them, by the same Operation, the *Ether* and all the rest might be involved in the same Confusion, and the whole World be turned into one Immense Globe of Water, having the Earth as a Core remaining in the middle. And that if a proper Menstruum were applied to dissolve it, as such may be had in nature,

(and who knows but that the Salt of the Ocean being then) separated from it's Mixtion, with the purer Elementary Water, whose Globular Particles muffled and blunted the Edge of it's sharp Angles, might prove such a Solvent? Which then precipitating into the bottom, might with it's sharp and aculated Points exert its Corrosive Virtue, open and attenuate the Solid Body of the Earth,) the Earth also might be reduced into its Original and Constituent Atoms, whereby the World would again return to the old *Chaos*, or *Thales Melesius's* First Principle of Water.

The Prophet *Elijah*, it seems, was not Ignorant of this Philosophy, when after God Almighty had made him the instrument of the Miraculous Vindication of his own Glory and Worship, from the Idolatry and False Worship of the Priests of *Baal*, he had promised King *Ahab* Rain (the *Israelites* having had none for three Years before) he sat down upon the Top of Mount *Carmel*, ordering his Servant to go seven times and look toward the Sea, and to bring him word back what he observ'd there, this his Servant having done, and after the seventh time bringing his Master the News, that he saw a Cloud rising from the Sea no bigger than a Mans Hand; the Prophet thereupon sent to the King advising him to hasten home, lest he should be stop'd by the Rain, which accordingly ensued immediately after, now this having been observed in the *Mediterranean* where *Spouts* frequently happen, and so like in all Circumstances to that which I observed in the Ocean, they were both of them, no doubt, the effects of the same, natural and ordinary Causes acting by the Will of God in an extraordinary Manner.

There have been several particular and local Floods and Inundations in the World; as the *Ogygian* and other Floods of the Ancients, taken Notice of by our Author in his *Theory of the Earth*, and in most Countries there are daily Instances of Land Floods and Inundations; Now since in all
such.

such Inundations, the Waters of the Sea are not diminished, but rather increased, the Water-Mark being carried further up, and the Tides swelling higher upon the Shore; the Rivers overflow their Banks, and the low Grounds ly drowned under Water, if Dr. Burnet, since he allows no Miracle of a New Creation of Waters, nor that they can be borrowed from any Neighbouring or Superior Orb, for which I quarrel not with him, can shew any rational Way, besides what I have now alledged, how Waters can be had to cause those Inundations which frequently happen, he shall be more than a Philosopher, *erit mihi magnus Apollo*, at such Times, the Water appears Turgid and Flatuous, as Impregnated with some Extraneous Body, and the Air Thick, Raw and Squallid. So that Men covet a Close Room, where they may enjoy a corrected Air, as the Fish skulk to the bottom to be refreshed by a purer and untroubled Water, which shews, That both then are unduly mixed for the common uses those Elements are intended for; and therefore since *plus* and *minus non variant Speciem*, the same Causes which serve *pro tanto* may serve *pro toto*, since no Man can deny, but that they Exist in the World, nor no Christian doubt, but that God Almighty, if he please, may Employ and set them at Work, and *Moses* no where says, That the Earth was drowned with Salt Water. So that, I think, if the Author do but make a Serious Reflection upon the Reasons now given, he cannot but be ashamed of his blunder, as to the quantity of the Water necessary for the Flood, and much more of his reason and manner of making it, and confidence in maintaining the same: When in his reply to Mr. Warren, one of his Answerers, he says, he believes the Truth of his *Hypothesis* as much as any thing of that Nature, can be believed, for since the System of *Moses*, which is as agreeable to Natural Reason as any thing can be, is a Thing of the same Nature, and as firmly believed by all who own the Scriptures to be the Word of God, as any Article of our

our Creed. He must either renounce this Faith of his, or, by keeping it, be an Infidel.

It's time now that we consider, what Expedient our Author hath taken to find out Water enough to drown the World, without any necessity of Miracle, and without any respect to the Relation of *Moses*; and this we find he has done by making a *New Genesis*, new modelling the Fabrick of the World, and Ordering the State of Nature by turning one *Chaos*, into another, and indeed a better into a worse: For when he stuffs his *Chaos* with Ponderous and Earthy Parts, Watry Parts, Light and Unctious Parts, &c. which are compleat and perfect Natural Beings, consisting of Matter and Form in the Language of the Schools: He represents to us a Chaotick State of Nature jumbled into Disorder and Confusion; and not a True and Original *Chaos*, which was no more but what the Poet says, *rudis indigestaq; moles*, bare and indigested Matter, void of all Form; but susceptible of any that it should please an Almighty Creator to stamp upon it. And nevertheless in purging and digesting this his *Chaos*, such as 'tis, into a Frame and State of Nature, he observes a Method that turns all topsie turvie, and quite inverts the very Order that the Laws of Natural Motion and Gravity, and his own Principles require. For contrary to that Principle of Gravity, upon which he lays so much stress, in building us a World out of a Natural *Chaos*, he observes a very preposterous Method, and makes that which should be the Roof the Foundation. This he exposes to open View in the Scheme he gives us of the World, as thus; He places the lightest of all the Elements, instead of the heaviest, in the Foundation, and makes the Fire to be the Centre of our Globe. But for what reason he does so, unless it be the kindness he has for *Sea-Cole*, for the good Services they may have done him, I cannot imagin. Next to that he places a Lay or Orb of Earth; over that a Lay of Water, and over all, another Lay or Orb of Earth for a crust
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and covering, *stratum super stratum*, as the Physicians use to prescribe. These, as he says, continued in this State for a long while, till at length this upper crust and covering of Earth growing old and crazy, chopt and decay'd, did in the days of *Noah* break to pieces, and fall into the Water underneath, where it was soak't in a Deluge, and thereby the Face of the World was Altered and Changed from what it was before, to what we see it at present. For the Surface of the Earth, which before was even and smooth, was, as he would have us believe, by this disruption, made Rough and Rugged, Mountains and Vallies, Hills and Dales, steep Rocks and Precipices, which never were before, then appearing, and the Waters that had formerly lain hid under Ground, became an open Sea consisting of a Spacious Ocean and Various Bays, Creeks, Gulfs, Inlets and Lakes, as now it shews it self.

My Answer now in short to all this, is, That there is not One Word of it True, nor indeed Possible in Nature, that it can be True, even granting the Authors *Hypothesis* could consist with the Laws of Natural Motion and Gravity, as from what hath been said before may be demonstrated it cannot; because according to that undeniable Principle, which I laid down in the beginning, and which the Author cannot reject; That all Bodies which rest upon a Center must of Necessity cast themselves into an Orbicular or Circular Figure: That there is no *Vacuum*, and that no Body in this Globe or Sphere can move out of its Place, but it must succeed into the Place and Room of that Body, which did dispossess it, the Expulst into the Place of the Intruder. If the Crust of Earth, which the Author will have, to have been the Circumference of this Globe, did break and fall down, the Orb of Water underneath being then dispossess'd by the Earth so falling in, must needs mount and succeed into the Place of the Earth, filling all the Space, which that Orb had abandon'd before, so that the Earth must

must for ever lye soust in it's own Pickel, impossible to be retrived again into dry-Land, unless by a Miracle as great as any that he would avoid, that is, God Almighty's annihilating all the Water, diminishing the Extent and Compass of the Globe, and altering the whole Frame of Nature. How deep the Earth would then be under Water, it is not easie to be determined; since as the Learned Dr. *Beaumont* justly complains, the Author has assigned no proportion to his several Orbs; but if the Proportion mark'd in his Scheme be exactly measured with relation to the Globe of this our World, the Waters then over the Earth must have been of a prodigious Depth.

For in measuring the Scheme he gives us of the Globe, we find that the Orb and upper Crust of the Earth takes up one fifth Part of the Semidiameter of the whole, so that the Semidiameter of the World being Three Thousand Five Hundred Miles, the fifth Part of that which is Seven Hundred Miles, and makes the Thickness of that Superior Orb falling into the Water underneath, the Water mounting into the Place of it, must needs fill all that Space of the Globe, which the Earth had forsaken. But being tho' much of the same Dimension as to it's Depth and Thickness, an inferior Orb rising and making a larger Circle, it would not indeed be of the same Depth, when Circumferential, as when it was Intermedial, yet I think I may venture to say, without being too exact in computation, it would still have been near five hundred Miles in Depth, and that's Water enough, you'll say, to bob for Griggs in. But if we take an estimate of the same Depth from his Doctrine, we shall find a vast odds and disproportion in the Matter. As thus, In the Sacred *Theory* of the Earth, the Author Affirms the Ocean where it is deepest not to exceed two Miles in Depth, so that it being by him confessed, that the Sea lies now in a shelving Bed, that obliquely descends from the sides to the middle, where it makes a kind of obtuse Angle at the bottom, were the sides Perpendicular

dicular, and the Water every where equally deep, then this Depth of Sea must be lessened by one half, and consequently be but one Mile in Depth. And then again, did this encompass the whole inferior Orb of Earth, as it did when it was the Abyſs before the Disruption, according to his *Hypothesis*, whereas now it does but Encompass one half of it, it must suffer the Diminution of another half of the Depth, and so the inferior Orb of Water, or the Abyſs could not be above half a Mile Deep. Which, if Extended Round the Exterior Surface of the Earth, must needs make but a very thin ring of Water. Now, tho' the Disproportion of seven hundred Miles, (the Depth of the Abyſs according to his Scheme) to one half Mile, be somewhat odd and strange, yet it seems almost as strange, that the Author should make the Mountains so High, and at the same Time the Waters so shallow: When, according to his Doctrine, the Height of the one depends upon the Depth of the other: For Explanation sake, Let us consider in what Manner he produces Hills and Mountains. He supposes then before the Disruption, that the Convex Surface of the Superior Orb of the Earth being Smooth, Uniform and Equal, was as High as the Tops of the Highest Mountains now are, and that upon the Disruption, the Parcels and Fragments of broken Earth sinking and falling down, left some Parts remaining, which made the Tops of Mountains, the Highest whereof, are not above six Miles High. Now let us grant, which indeed cannot nor ought not to be granted to a Natural Philosopher, that upon the Disruption, when all the Parts of the Superior Orb of the Earth were Loose and at Liberty; some Peake or other should miraculously (for naturally it could not,) hover and hang suspended in the Air, or float upon the Water till the falling Fragments should likewise miraculously, or by Violence (since naturally they could not) deviate from the Streight and Perpendicular Lines, which guided them towards the Center, and Edg and Side inobliquely to make a Pedestal, or Support for the

remaining Top of a Mountain: Yet seeing the broken Parts of the Crust of Earth could fall no lower, than the Depth of the Water, which was to receive them, could allow of, and that being but half a Mile Deep, they could sink no lower, and consequently the Top of the Mountain from which they fell, could be no more than half a Mile in Height; and so we have the Mountains six Miles High, dwindled into Mole Hills of half a Mile Height. But should we grant what he says, That the Tops of the Highest Mountains are six Miles High, then the Waters of the Abyss into which the Fragments fell, to suit with that Height, must needs be six Miles Deep, and consequently by the rule of Proportion above-mention'd the Sea in the Deepest Place four and twenty Miles Deep, and the Sea-shore twenty four Miles distant from the Bottom of the Abyss. Which would make it as High again as the Earth was before it's Disruption.

Let us now consider a little from the Dimensions he gives to his Orbs, and the Height and Depth of Mountains, Vallies and Sea, what the Extent and Dimension of the World must be according to his Schemes and Doctrine. If we Measure then his Schemes of the Globe, we shall find, that the two Superior Orbs of the Earth and Water, make together two Fifths of the Semidiameter of the whole, and as it has been necessarily inferr'd from his Doctrine, these two making but half a Mile each, that is, both together one Mile, the other three Fifths can amount to no more than to three half Miles, and altogether but to two Miles and one Half, which being the Semidiameter of the Globe, the whole Diameter can extend to no more than five Miles; and consequently the whole World, to no more than fifteen Miles in Circumference. This is such a little Button of a World, that were it to be cut out into Commons, it would hardly suffice, either as to Quantity or Quality, to make competent Shares, for all the Pensioners in the *Charter-House*, if he Thought of them when
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he made it. But let us again take it in the Largest Extent, that his Doctrine can stretch it to, and that is, the Mountains being six Miles High, and consequently the Water (without which they could not be so) six Miles Deep, then the two Orbs of Earth and Water, which make two Fifths of the Semidiameter of the Globe, being twelve Miles in Depth, the other three Fifths must be Eighteen Miles more, and so the Semidiameter being in all thirty Miles, the whole Diameter must be Sixty, which makes the Globe Nine-score Miles in Circuit. This indeed is a Size somewhat more befitting an *Orbis terrarum universus*, and looks like a World of another Mans making; tho' after all, if Reason can draw necessary Consequences from the Premises of Scheme and Doctrine, both are the Workmanship of One and the same Hand.

I can hardly believe a *non cogitaram* will pass among Criticks, for a satisfactory Excuse for so many Slips, Blunders, and *Bewewes* in a Matter of so great Importance, and therefore 'tis like, the Author himself, or some good Friend for him, may hit on some expedient and new Way to save Bacon; and probably, by turning the Sacred *Theory* into a Romance, alledge, that the Author meant not the Round World, which God made for Man and his fellow Creatures to dwell in, but a World of his own Creation, contrived to please Children of all Sorts, and curry Favour with some new fangled Patron, by such an Ingenious Tryal of Skill. If so, the Author might have conceived and brought forth as many such Worlds, as he pleased, and given them to whom he had thought fit, without the least Trouble and Molestation from any that I know of, had he let *Moses* and the Holy Scripture alone: But since he has struck so bold a Blow at the Credit and Authority of both these, and consequently of *Religion* and the Rule of *Faith* and *Manners*; I think no Honest Man will deny, but that he hath given sufficient Provocation to all, and even the Weakest and Meanest of

all, who think themselves obliged to Defend the Religion they believe and profess by giving a Reason of the Faith that is in them, to enter the Lists and make Head against such a daring Aggressor, especially seeing the Provocation comes hightned by this insulting Challenge usually made by the Friends and Favourers of the New Doctrine, to such as seem to dislike it, and which I my self, among many others, have met with, *Viz. Why is it not Answer'd? Why don't you Answer it then?* As if they would stop Mens Mouths by daring them to Speak. In the mean time, it must be acknowledg'd the Author was pretty Fortunate in his Choice, when he presented his New made World, to a Good Natur'd, Peaceful and Unaspiring Monarch: For had he made an Offer of it to that Grand Signior, who would have had his Pioneers take shovels and throw the Isle of Britain into the Sea; Or to such a World-Subduing King as Alexander, who straitned within the narrow Limits of this spacious Continent, wept there were no more Worlds to be Conquered; such a Monarch would have lookt upon it as a Bomb, or Granado-Shell fit to be flung out of a Mortar into the Moon, or some Neighbouring World he intended to conquer or destroy, rather than a spacious Field large enough to bear the illustrious Trophies of his Victories, or to reward the faithful Services of those many Heroes and Worthies that must have followed him in his glorious Expeditions. And then the Author must have thought himself bountifully and magnificently treated by such a Prince, if he had received from him a little House or Habitation to be Master of, in his own World, as a Reward for his industrious Labours. And the rather, that in all likelihood, his little House would have lasted as long as his little World; *nam super hanc petram ædificata est domus sua*; yet after all, to give every thing it's due, if we view this new made World in all the several Lights, the Author has been pleas'd to place it in, we shall find it, little as it is,

is, abounding with Rarities, and such to, as Nature can nowhere parallel: As for instance, amongst many more that I could name, if we look on it through one end of the Aspective, the Author presents to us, we may observe the Mountains that are Six Miles high, not to be above Half a Mile in height; again, let us but shift our Ground, and take the other end of the Glass, as he gives it us, we may find, that the Tops of the Highest Mountains being Twelve Miles distant from the lowermost Orb of Earth, or the bottom of the Abyss, are Six Miles higher than the Sea-Shore and Vallies. And lastly, if we take a glance of it on another side, we may perceive, without straining of Opticks, or forcing a Theory, that the Sea-Shore being Four and Twenty Miles distant from the bottom of the same Abyss, is Twelve Miles higher than the tops of the highest Mountains. The Mountains Six Miles higher than the Valleys; and then to make amends for that, the Valleys Twelve Miles higher than the Mountains, is a Rowland for an Oliver indeed; and such a *bocus pocus* piece of *Legerdemain* in Natural Philosophy, that he who is able to unriddle it, and make such Inconsistencies stand friendly together upon a Level, might easily have helped some Young Lads out of the Mire, by answering a drolling Question, that I have known put to puzzle them; *viz. If I were under you, and you under me, who would be uppermost*; for the poor Lads had nothing to say to the matter; but, if you can tell me who is undermost, I can tell you who is uppermost.

An uncouth Subject, handled with as strange a confidence, may surprise a little at first I confess; but why it should obtain a Vogue and Reputation in the World, or be thought to have Charms strong enough to attract the Esteem and good Opinion of young Philosophers, I cannot conceive; since I dare confidently affirm, it can make no fit Pattern for their Imitation, as to a just and consequential way of Reasoning, and much less a proper and sure Guide to lead their unexpe-
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rienced steps through the secret and difficult Paths of Natural Philosophy, into the true knowledge of God, of themselves, and of their own Happiness.

The Author that could rush into, and break through, such a Thicket of Thorns and Briars, and neither be ruffled, scratch'd nor torn, must needs be a dextrous and well fenced Man; for my own part, I did but just enter into the Skirts and Purlieu of the Forrest, when I found my self quickly caught, and so closely beset and hamper'd with Implication and Contradiction, that I had much ado to find Words, and proper Expression, to disintangle my self from Nonsense.

And indeed to reckon up all the Absurdities which may be plainly infer'd from this silly Hypothesis, would require a large Volume, and is too much to be crowd'd into the narrow Compas of a Specimen, to which I am limited; I shall leave it then to others, who may have better Advantages and Opportunities to trace them, and proceed to see, how he mends the Matter with an Egg.

This Learned Author certainly must be at great variance with *Moses*, for rather then not to Contradict him, and give him the Lye in Matters of the highest Importance, He contradicts himself, his own Principles, and Concessions; and the Principles of Nature, Reason and Religion. For having given us, in his Book of the *Theory* of the Earth, a Scheme of the World intirely Round, being convinced by the Evident Principles of Nature, That it must be so; He afterwards in the same Book Represents it to us as Oval, making the same thing, at the same time to be, and yet not to be, and so verifying a Contradiction in all it's Conditions of *ad idem, secundum idem & eodem tempore*, I shall not here repeat what I have said before, to prove the Orbicular Figure of the World, nor spend much Time in Confuting the Absurdities that necessarily follow such Erroneous

Doctrine; the Ingenious Dr. *Beaumont* having already successfully laboured in that Province, I shall only observe, that the Advantages that he thinks he has gain'd from it, in finding out Paradise, are not able to countervail the Prejudice it may do to Mankind, by overturning all Religion, and so consequently setting them in a fair Way to Hell.

Instead of proving his Doctrine of an Egg-World by Natural Reason, which indeed he could not do, He endeavours to Establish it, by the Authority of the Ancients, who have compar'd the World to an Egg; and he had done well to have told us, what kind of an Egg, whether a Hen-Egg, or a Goose-Egg, since it is not the Figure alone that makes the Egg, nor are all Eggs of the same Figure; or in which of the two Paradise was the most likely to have been found, tho', to say the truth on't, it may be found equally in either of them, as well as where he has placed it under the *North* and *South* Pole; for having reckon'd up the various Opinions of Authors concerning Paradise, whether it was a delightful Garden, a local Paradise, or a Paradisaical State of the whole Earth: He gives it for the later, and so flatly contradicts *Moses*, who tells us, that God planted a Garden *Eastward* in *Eden*. He cannot Excuse this by saying, that *Moses* spake Figuratively, which some Good and Learned Men have thought, and with Reverence and Humility endeavour'd to Explain the Mystery, since he himself speaks Literally and in the same Sense, That he owns *Moses* to have spoken, because in his comparing both together, he makes the Pleasures and Advantages of Paradise, to consist in Terrestrial Velocities. Now when *Moses* says, that Paradise was a delightful Garden *Eastward* in the World, and Dr. *Bornet*, on the contrary, Affirms, that all the World *East, West, South* and *North*, was a delightful Garden and Paradise; there can be no Figure in the case, unless to tell a Lye be to make a Figure, but whether *Moses* might have spokeliterally or Figuratively,

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the horrid and impious Consequences, which attend our Authors Opinion, are still the same; for if there was no other Paradise, but a Paradisaical State of the Earth, and that this continued till the days of *Noah*, when the Flood happened by the Disruption of the Earth, which quite altered the State and Figure of it; then it necessarily follows, that it was *Noah*, and not *Adam*, who lost Paradise.

Now if *Adam* did not lose Paradise, no more did not he Sin; for the Punishment, and the Sin being *relata quæ mutuo se ponunt & tollunt*, if the one be False, the other is so too; so that if *Adam* did not lose Paradise, which was the Punishment, neither did he commit Original Sin which was the Cause of it. Again, if *Adam* did not commit Original Sin, he did not forfeit the Primitive Innocence and Integrity of his Nature, and seeing all the Essential Properties of the Human Nature, whereof Innocence then was One, were by ordinary Generation transmitted from the first Man to his Posterity, the Off-spring of *Adam* must have continued Innocent, and no Sin have been in the World. So that there could have been no such thing, as that *all Flesh had corrupted their ways*. No such thing, as the Sons of God saw the Daughters of Men, lay with them and begat Gyants, there could be no such thing as *Nimrods* and Mighty Hunters, who usurped the Rights of others, and invaded the Possessions of their Neighbours; or if that was done, it must be done by Righteous Men, and with a Good-Conscience, a Doctrine that cannot be much disliked by many of the Saints of our Age. There could be then no necessity of a Preacher of Righteousness, since all Men were innocent; and therefore if *Noah* would needs be so Officious a Phanatic as to Preach without a Call, and disturb honest Men, he was rightly served for his Pains, and lost Paradise for his Labour. Since then the Religion of the greatest and most Civilized Part of the World depends

depends upon the Belief of *Adam's* Committing Sin; and therefore losing Paradise, and that of Christians more particularly, upon the Belief of the Disobedience and Transgression of the First *Adam*, and the perfect Obedience, and compleat Satisfaction of the Second, and all this be no more than Fiction and Fable, as it needs must be, if the Doctrine of our Author be true: Then was *Moses* a meer Gypsy, the Patriarchs, Prophets and Apostles Juglers and Deceivers; and, I tremble to say it, the Son of God, Christ Jesus the Saviour of the World an Arrant Impostor; and thus the Author has brought his Eggs to a fair Market; for here we have all Religion, Virtue and Morality pelted out of the World with one rotten Egg thrown by a *Left-handed Philosopher in Holy Orders*.

These are some material Heads, which I think may be enlarged into a compleat Answer to the *Theory of the Earth*; though at the same time, something more may be said in Answer to the Author; for *Seria mixta jocis* does do well; and if an Author with so much Vanity and Ostentation, insult the greatest Truth, and batter the strongest Bulwarks with no better Ammunition than full blown Bladders, besides, a serious Confutation of Reason and Argument, he ought to have a little of the Jocular, and a Lash or Two of Railery and Merriment.

It is a good while since I laid this Keel, with design thereupon to have built an Ark that might have saved the Reputation of *Moses* and Holy Scripture, from the Deluge of Vain and Atheistical Philosophy, Materials I had ready, and should have finished the Work before Dr. *Beaumont's* Answer came to light; but being unable to go on with it my self, because of want of Sight and Friends; notwithstanding all the Opportunities I could use, refusing to assist me with an *Amanuensis*, as thinking that Charge too great a Venture to be committed to the Care and Management of a blind Undertaker, from whose Labour they could expect no great Success, I

have been forced to desist, and at length, to procure a Friend to write for me this short Specimen for their Satisfaction. So true it is, that Contempt is the Deformed Shadow that constantly attends an Ill-shap'd Fortune.

*Magnum Paupertas Opprobrium, Juber
Quicquid & facere & pati.*

The Scriptures tell us, Of a Poor Man that by his Counsel once saved a City, but that no Body thanked this Poor Man for it: If he had lived and done the same in this Age, it's odds, but he had met with the same Entertainment. Holy David in his Distress; became the By-word of Fools, and the Song of the Drunkard; and no wonder, since a far greater than David, our Saviour found the like Usage, and complains of it. No Man then that would follow him, and bear his Cross, ought to murmur and repine.

If therefore any other more Skillful and Fortunate Artist than my self, as there are a great many, shall with the Help of these Materials, rear the Fabrick, and finish the Work I intended to have done, I shall not envy, but applaud his good Success; only I think it but reasonable, That the poor Labourer, who hath lugg'd in the Materials, should be thought worthy of his Hire: And that if he have not the Praise of having done the Work, he ought, at least, to have the Acknowledgment that it was not done without him.

F I N I S